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ABSTRACT

Responses of 127 agricultural specialists concerning their information seeking and interactive contacts within the Missouri Extension Service revealed an interpersonal communicative network among subject matter specialists with a potential for performing the integration (putting together) function on behalf of farmers. This occurred in an organizational setting well suited to the production and delivery of science-based information to users, but very dysfunctional to the performance of the integration function. The interpersonal network which operated at both the within-district and the on-campus levels included all types of in-field agricultural subject matter specialists, but was most operative among those concerned with the agricultural production and farm management specialties. The interpersonal network enabled the informational system to preserve its advantage for specialty information development and delivery while developing a necessary integration function capability. A generalizing conclusion indicated that with the existence of three conditions (a mutually recognized need among specialists for informational exchange with others not of their own kind, an administrative structure allowing or insuring free interpersonal exchange of information, and personal rewards for information exchange among subject matter specialists) interpersonal informational servicing relationships would form and persist, to the mutual advantage of all, as they did in the Missouri situation. (Author/NEC)

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ABSTRACT

THE POTENTIAL OF INTERPERSONAL RELATIONSHIPS AMONG SUBJECT MATTER SPECIAISTS FOR THE PERFORMANCE OF THE INTEGRATION FUNCTION ON BEHALF OF CLIENTS: Missouri Agricultural Extension As A Case In Point*

Herbert F. Lionberger and Wei-Yaun Cheng**

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Responses of 127 agricultural specialists concerning their information seeking and interactive contacts within the Missouri Extension Service revealed an interpersonal communicative network among subject matter specialists with a potential for performing the integration (putting together) function on behalf of farmers. This occurred in an organizational setting well suited to the production and delivery of science-based information to users, but very dysfunctional to the performance of the integration function. The interpersonal network which operated at both the within-district and the on-campus levels included all types of in-field agricultural subject matter specialists but was most operative among those concerned with the agricultural production and farm management specialties. The interpersonal network enabled the informational system to preserve its advantage for specialty information development and delivery while developing a necessary integration function capability.

A generalizing conclusion in the nature of a hypothesis was that with the existence of three postulated conditions interpersonal informational servicing relationships would form and persist, to the mutual advantage of all, as it did in the Missouri situation.

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* Paper prepared for the annual meeting of the Rural Sociological Society at Guelph, Ontario, Canada, August, 1981.

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ACHIEVING THE INTEGRATION FUNCTION IN THE DELIVERY OF SCIENCE-BASED INFORMATION TO FARMERS: THE MISSOURI SYSTEM AS A CASE IN POINT*

Rev: 4/6/81

Herbert F. Lionberger and Wei-Yuan Cheng**

1. Genesis of the Integration Problem

The inclination in the developmental processes generally is for functions to become differentiated and assigned to specialized agencies (Smelser, 1963:12-15, 102). This is as true for technical information as it is for the development and delivery of other inputs that people use.

Thus, the situation is for frontiers of knowledge to be explored and extended on many fronts by specialists in organizations specially equipped to do the needed research. Some of these research units exist in land grant universities where a degree of coordination of the total research and extension effort is possible. But science-based information increasingly is created by professionals who deal quite exclusively with their own academic concerns (Havelock, 1971:Ch. 3). Even though a portion of what researchers develop is transformed into a potentially usable product and tested and delivered to potential users, this too is often done in a piecemeal manner not directly applicable to the needs of users who themselves are not scientists.

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* Paper prepared for the Rural Sociology Society Meetings in Guelph, Ontario, Canada, August, 1981.

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The Differentiated Information Supply Systems Context

By necessity, basic science knowledge continues to be generated mostly in the highly differentiated specialty sections of what has been called the autonomous part of land grant universities (Trow, 1975; Castle, 1980), or more specifically in it's divisions and academic departments. The relationships that do exist among different bodies of knowledge of the different disciplines bear little relationship to the integration of knowledge needed by non-scientist users. This knowledge, highly differentiated along academic lines, is what is available for the extension subsystem to deliver.

Responding to the differentiated informational needs of a pluralistic society and in accord with the system created to supply it, the generalist representative of the university in the local community (county agent) has been mostly replaced by specialists. They are attached to academic departments more suited to extending the frontiers of basic science knowledge than to solve the problems of people. Thus the same differentiated organization that is used to generate the information is duplicated in the field to deliver what is potentially usable. The only professionals in the system that have any formal training in putting specialty information together seems to be the farm management specialists attached to the Agricultural Economics department. While providing an ideal arrangement for delivering highly specialized information, the highly differentiated organizational arrangement greatly intensifies the problem of getting the isolated bits and pieces properly integrated into individual farming operations.

In-field placement of specialists further intensifies the problem. The state of Missouri is divided into 20 extension program planning areas comprised of three to ten counties (see Table 1). Each is staffed by an area director and a corps of specialists variously selected from the agricultural, home economics, community development, continuing education, business and industry, local government, and youth services specialists. One or more of the specialists are officed in each county of the extension (administrative) area. Irrespective of their location, they are expected to service the specialty informational needs of the people in all counties in their area. Thus again, the delivery system complicates the problem of integrating informational inputs at the local level.

Options for Performing the Integration Function

Putting the informational inputs together into a workable plan for users constitutes, in practice, the integration function in the information generation-use developmental process sequence. Achievement of this function has been addressed in a number of ways. The most traditional, and least appropriate has been to leave it exclusively to the users.

However it is more realistic to assume that the agricultural research and extension systems can and should assume some responsibility for performing this function. One approach is to provide information users with packages of practices rather than bits and pieces of disassociated information (Rogers and Shoemaker, 1971:153). Sometimes these packages are put together exclusively by specialists and sometimes with the help of the users. In any case, it is a step in the direction of providing some assistance in helping to put together different and separately delivered information on behalf of users.

Table 1 NUMBER AND KIND OF SUBJECT MATTER SPECIALISTS ASSIGNED TO EXTENSION PROGRAM PLANNING AREAS IN MISSOURI 1977

Extension Planning Area--and Number of Counties Serviced		Total	Kind of Subject Matter Specialist Assigned to the Areas														
			Farm Management	Livestock	Agri. Engineering	Agronomy	Dairy	Horticulture	Entomology	Family Farm*	Community Development	Local Government	Home Economics	Continuing Education	Business and Industry	Youth	Other**
Total		388	39	31	17	33	13	6	2	5	29	7	104	23	13	64	2
A.B.C.D.	4	22	2	1	1	2	5	1	--	--	1	--	5	1	1	2	--
Boonslick	3	9	1	1	1	1	--	--	--	--	1	--	2	1	--	1	--
Bootheal	7	26	2	1	1	4	--	1	2	--	1	--	8	1	--	5	--
D.O.W.	3	5	--	1	1	1	--	--	--	--	--	--	1	--	--	1	--
E-W Gateway	5	31	2	--	--	1	--	1	--	--	3	2	8	3	4	7	--
Green Hills	9	24	3	3	2	3	--	--	--	1	2	--	5	1	1	3	--
H.O.S.T.	4	11	1	1	--	1	1	--	--	--	1	--	3	1	--	1	1
Kansas City	5	33	2	2	--	1	1	1	--	--	3	1	8	2	3	9	--
Kaysinger Basin	6	15	2	1	1	1	1	--	--	--	1	--	4	1	--	3	--
Lakes Country	10	31	2	2	1	2	3	1	--	1	2	1	10	1	--	5	--
Lake Ozarks	5	13	2	2	--	1	1	--	--	--	1	--	3	--	1	2	--
Mark Twain	8	26	2	3	2	2	--	1	--	1	2	--	7	1	1	4	--
Meramec	6	18	3	2	1	1	--	--	--	--	1	1	5	1	1	2	--
Mid Missouri	8	28	4	2	1	3	--	--	--	--	2	1	8	2	1	4	--
Mo. Valley	3	12	2	1	1	1	--	--	--	--	1	--	3	1	--	2	--
NE Missouri	5	12	2	1	1	2	--	--	--	--	1	--	3	1	--	1	--
NW Missouri	5	14	1	2	1	1	--	--	--	1	1	1	3	1	--	2	--
Ozark Foothills	5	7	1	1	--	1	--	--	--	--	1	--	2	--	--	1	--
Ozark Gateway	4	14	1	1	1	1	--	--	--	--	1	--	5	1	--	2	1
Show - me	4	16	2	1	1	1	--	--	--	1	1	--	5	1	--	3	--
SE Missouri	7	21	2	2	--	2	1	--	--	--	2	--	6	2	--	4	--

* Faculty assigned responsibility for the Family Farm Program in the Area; academic specialty unknown.

** Only agriculturalist designation reported.

A second way that integration problems have been addressed is through creating specialists who have the capacity for putting things together on behalf of users. The farm management specialist and the community development specialist, both in this state, are more broadly trained generalists than narrowly trained academic specialists. In addition to learning a little about many things, both develop a capability for helping clients (individuals and groups) to put diverse informational inputs together into usable new combinations for the users (Lionberger and Wong, 1980).

Third, extension specialists may try to increase the clients' management ability so they can manage their own affairs without outside assistance. This, which represents the highest order of extension teaching, is included in nonformal educational programs generally (Lele, 1975). Missouri Balanced Farming of years past and the current Small Farmer Family Program in the state (Endows, George, Hoilk and Wiggins, 1979) are other examples.

Fourth, mechanisms can be built into informational development and use system to facilitate integration of new informational inputs into user goal achievement efforts. This may occur anywhere between where information is generated, usually in research agencies (e.g., the experiment stations in agricultural universities), to where it is put to use in the users' social system. These, of a relatively institutionalized nature, in descending order of complexity, are:

a. university associated professional schools that are dedicated to making use of research generated information.

b. academic departments in universities that specialize in helping users integrate new knowledge into their own plans.

c. offices or positions in the agricultural research - extension system that link a variety of university resources with user needs.

d. interpersonal communicative networks among subject matter specialists that facilitate the integration of specialty informational inputs into workable plans for users of the information.

These arrangements may be of a relatively enduring nature, based upon needs to serve the informational needs of a particular type of recurrent or temporary problem, in the form of interdisciplinary task forces or committees that are dissolved when the issue to be addressed is solved.

Finally, professionals frequently operate as information integrators by writing textbooks, and/or serving as consultants. The practice of jointly formulating packages of practices on behalf of clients is an illustration of how professionals can bring together a diversity of informational inputs to bear on recurrent needs that non-scientist information users have.

Yet, despite numerous options available to the information development-delivery system to contribute to the performance of the integration function, there inevitably remains an inclination to so-called "pipeline" (from source of origin to user) information delivery (Beal, 1978). This is in contrast to a more egalitarian interactive approach to the generation and utilization of information more respectful to the indigenous knowledge of clients.

2. Nature and Scope of the Inquiry

In the absence of an opportunity to study the performance of the integration function either in process or of specific content, we relied on indicators of potential to perform this function.

The Integration Function Potential Focus

The focus is primarily on (1) the integration potential exemplified by farm management specialists who occupied positions within the information generation and use (research and extension) system (Option 2), and (2) the within-system interpersonal network of information specialists (Option 4a).

The quest for the integration function potential in both cases is sought in the (1) number and diversity of contacts that field positioned subject matter specialists had with each other and (2) the unidirectional vs interactive nature of these contacts.

Conditions within a highly differentiated informational system conducive to the formation of enabling interpersonal communicative networks of specialists are the existence of:

a. A mutually recognized need among specialists for informational exchange with others not of their own kind.

b. An administrative structure and/or philosophy that allows free interpersonal exchange of information to happen or insures that it does occur.

c. Personal rewards for information exchange among subject matter specialists.

Within this general context, farm management specialists who had generalist type training were expected to exemplify the greatest integration function potential.

Source of the Data

All agricultural and community development specialists, state extension service and education assistants assigned to the Missouri Small Farmer Family program were asked to complete lengthy questionnaires in which they indicated the contacts they had with on-campus faculty and their

own area based subject matter specialists.[1] These questionnaires provided most of the information needed for examining the potential of the interpersonal network for contributing to the performance of the integration function.[2]

Information about the more tangible system features (programs and organization) was obtained by personal observation and from interviews with extension administrators; thus something of a case study approach.

Analytical Procedures

The statistical techniques used were confined mostly to contingency tables reporting percentages and measures of central tendencies. No tests of statistical significance were deemed necessary since almost 90 percent of the agricultural specialists completed the questionnaire. Although essentially descriptive, the problem of integrating diverse inputs for informational utilization is deemed to be of sufficient importance and sufficiently neglected to warrant such a treatment.

Because different agricultural specialists were deemed to have different integrating potential, they were divided into the following categories:

i) Farm management specialists who are integrators of information by definition and assigned responsibility. They, in contrast to others, address the integration issue created by a highly differentiated information, development, and delivery system. They do this by helping clients put informational inputs together into a workable plan for achieving their goals. Farm management specialists, new by comparison to other specialists, are attached to the Agricultural Economics Department of the College of Agriculture.

ii) Production specialists who are primarily concerned with a particular agricultural commodity or class of commodity. Agronomy, livestock, dairy, and poultry production subject matter specialists are included in this group. Their expertise is likely to be most directly usable by farmers specializing in their own area of expertise.

Their on-campus contacts were expected to be quite exclusively confined to own academic department.

iii) Production supporting specialists who render services to farmers primarily in an agricultural production context.
These include specialists in agricultural engineering, and entomology.
Although somewhat of a residual category, professionals in this category were expected to have more varied informational contacts than the production specialists.

Within this general context, farm management specialists were expected to exemplify the greatest integration function potential.

Operational Indicators of Potential for the Performance of the Integration Function

These were deemed to center primarily in the number, nature and diversity of personal contacts of an informational servicing nature that in-field subject matter specialists had with each other and with their on-campus colleagues. More specifically the following were regarded as indicators.

1. Number and diversity of contacts that the agricultural specialists (agronomy, livestock, horticulture, dairy, agricultural engineering, and farm management) had with:

   a. In-field specialists other than their own kind.

   b. The on-campus faculty other than their own academic departments; also in this case the number of different departments and faculty involved.

   Diversity of contacts were regarded as the prime indicators of integration potential. Number is an indirect indicator in that it is a measure of intensity.

   Where differences in the availability of particular kinds of specialists in the field was grossly limited the possibility for making contacts with them e.g. for dairy, horticulture, and agricultural engineering, these facts were noted.

   In addition, a table showing their availability within areas was provided so the reader can make his own judgements.

   Contacts with all area specialists were reported even though only those in agriculture, and community development completed questionnaires about their own contacts made.

2. Nature and purpose of the contacts made.
Those made for planning joint programs and idea exchange were regarded as having potential increment over mere acquisition of information or seeking direction because of the interactive nature of the former.

High intensity use and high value placed on cross-disciplinary information sources were regarded as additional evidence of support of integration function potential.

3. The Research Findings

What is the nature of interpersonal network in which the in-field subject matter specialists are involved? What can be inferred about its potential for integrating diverse specialty informational inputs on behalf of users? Firstly, we looked particularly at the cross disciplinary contacts among specialists in the field and their own assessment of the networks utility for supplying the information they need for their in-field users. Secondly, we looked at contacts that different kinds of specialists made with the on-campus faculty within and outside their own specialty areas. Their evaluation of them for their own work was also assessed. The central question is whether the networks are such that they can provide an information integrating potential in an otherwise highly differentiated system for information development and delivery.

The Interpersonal Network at the Area Level

Number and Nature of Contacts - Table 2 reports the percentage of subject matter specialists within the respective districts who reported making weekly or more frequent contacts with the different specialists assigned to the administrative areas. Table 3 reports the percentage with at least monthly contacts of each with the other specialists. It is accordingly readily apparent from tables 2 and 3 that the intensity of interpersonal contacts among farm management, agronomy, livestock and

TABLE 2: PERCENT OF AGRICULTURAL AND COMMUNITY DEVELOPMENT EXTENSION SPECIALIST WHO REPORTED WEEKLY OR OFTENER CONTACTS WITH OTHER SPECIALISTS IN OWN EXTENSION ADMINISTRATIVE AREA DURING THE PAST YEAR

KIND OF SPECIALISTS REPORTING CONTACTS	Area Specialists With Whom Contacts Were Reported										
	All Agri. (%)	Cultural Mgt. (%)	Agronomy (%)	Livestock (%)	Agri Engineering (%)	Dairy (%)	Comm. Dev. (%)	Youth (%)	Home Econ. (%)	Continuing Ed. (%)	Business & Ind. (%)
Farm management	x	25.0	53.2	37.5	25.0	6.3	31.2	40.5	50.0	12.5	6.3
Agronomy	x	36.7	26.7	46.7	26.7	10.0	10.0	46.7	50.1	6.7	6.7
Livestock	x	42.3	65.4	26.9	34.6	15.4	30.8	65.4	42.4	11.5	3.8
Agri Engineering	x	42.9	71.4	57.2	21.4	21.4	21.4	42.9	57.2	7.1	21.5
Dairy	x	50.0	50.0	33.3	50.0	--	--	33.3	33.3	--	--
Community Development	58.7	x	x	x	x	x	x	51.9	55.3	48.4	20.7

TABLE 3: PERCENT OF AGRICULTURAL AND COMMUNITY DEVELOPMENT EXTENSION SPECIALIST WHO REPORTED MONTHLY OR OFTENER CONTACTS WITH OTHER SPECIALISTS IN OWN EXTENSION ADMINISTRATIVE AREA DURING THE PAST YEAR

KIND OF SPECIALISTS REPORTING CONTACTS	Area Specialists With Whom Contacts Were Reported										
	All Agri. (%)	Farm Mgt. (%)	Agron-omy (%)	Live-stock (%)	Agri Engin-eering (%)	Dairy (%)	Comm. Dev. (%)	Youth (%)	Home Econ. (%)	Contin-uing Ed. (%)	Busi-ness & Ind. (%)
Farm management	x	65.6	93.8	75.0	75.0	37.6	56.2	71.8	84.4	40.7	25.0
Agronomy	x	73.4	50.0	86.7	76.7	33.3	46.6	86.7	83.4	53.4	26.7
Livestock	x	73.1	80.8	50.0	84.7	38.5	53.9	76.9	77.0	34.6	23.0
Agri Engineering	x	85.8	100.0	92.9	21.4	42.8	50.1	71.5	85.8	42.8	42.8
Dairy	x	100.0	100.0	100.0	100.0	16.7	--	83.3	83.3	33.3	--
Community Development	82.8	x	x	x	x	x	51.7	82.9	72.5	72.5	55.3

engineering specialists was high. Weekly or oftener contacts were highest between agricultural engineering and agronomy specialists (71.4%). Yet this very high frequency interpersonal contact pattern also extended to relationships between agricultural engineering and livestock specialists and between livestock and agronomy specialists. Also universally high were contacts with youth and home economics specialists not centrally concerned with agricultural production.

Our initial assumption was that farm management specialists with a built in capacity and operational need for integrating bits and pieces of specialty information from many sources would be in more frequent contact with other agricultural specialists than those more narrowly trained in technical agriculture. This did not occur in the within-area interpersonal contacts. Agricultural engineers were more integrated into the interpersonal cross-disciplinary communication network than other subject matter specialists. A possible explanation is that agricultural engineering expertise was applied mostly in the context of other specialties - e.g., livestock or crop production than singly within own field. It is also quite possible that farm management specialists were already sufficiently versed in production agriculture knowledge to take care of most of their farm management needs.

Aside from the production agricultural specialists among whom person-to-person contacts were disproportionately frequent, there were also frequent contacts with production supporting spcialists; and with specialists in youth services and home economics, none centraly concerned with agriculture. Contacts of agricultural with community development specialists were generally more frequent than for continuing education and

business but much below those with fellow agricultural specialists. Weekly or more frequent contacts with C.D. specialists ranged from 10 percent for agronomy specialists to 31.2 percent for those in farm management. Comparable percent ranges were 7.1 to 12.5, respectively with specialists in continuing education and 3.8 to 21.5 with business and industry specialists (see Table 2).

Thus the potential provided within the interpersonal network within the area for integrating information for utilitarian use was heavily among specialists in the agricultural sector and with those in home economics. Contacts with youth specialists were probably more in the nature of servicing youth projects than for providing knowledge inputs for farm or home use. But when viewed in the community development context and thus from the vantage point of the C.D. specialists the potential of incorporating agricultural inputs into their operations was much greater than the reverse; also the initiative for establishing cross disciplinary information exchange was more often taken by the C.D. than the agricultural specialist. Thus it was that 58.7 percent of the C.D. specialists reported weekly or more frequent contacts with agricultural specialists of one type or another.

In general the same contact frequency pattern prevailed among subject matter specialists in the less intense monthly or oftener relationship but with an inclination to bring community development and continuing education specialists into the sphere of interaction at this intensity level (see Table 3). Specialists in business and industry remained peripheral to the interpersonal informational exchange even at this frequency of contact level.

Purpose of Contacts - Purpose of contact was regarded as an important integrating potential indicator because of its unilateral vs interactive nature. Interactive contacts offer more opportunity to get borrowed information adjusted to user needs than mere one way contacts. Response options permitted and their integrating function potential were:

Low integration potential - contacts for

direction

guidance and advise

confirmation of own views

getting information

High integration potential - contacts to

exchange ideas

plan joint programs

Since very few of any group of specialists made contacts primarily for the purpose of direction, advice or confirmation of own views and in fact most reported none at all, these responses were excluded from the analysis except to note their general nature (see Tables 4a, 4b, 4c). In a sense all are ego deflating to admit. A farm advisor would seldom be expected to go to a colleague to find out what to do or perhaps even for confirmation of a decision already made. However, one or all may occur as a latent consequence of conversations primarily for other purposes. Contacts to get information, like the ones above noted are basically unidirectional in nature.

On the other hand, contacts to exchange ideas and to plan joint programs, are necessarily interactive in nature.

Looking first at the chief purpose of contacts that farm management spcialists made with their area specialist colleagues, it is apparent from Table 4a that contacts with other farm management specialists in the area were mostly for planning joint programs (43.8%) and for idea exchange (28.1%). Thus with the farm management specialist the relationship with others of their own kind tended to be highly interactive. This was in marked contacst with their chief purpose for contacting other agricultural specialists which was mostly to get information. As might be expected these percentages were especially high for contacts with specialists representing the major production enterprises in agriculture; namely, agronomy (46.9%) and livestock (37.5%). But information seeking contacts were also very high with agricultural engineers (40.6%). Contacts either for planning joint programs or exchanging ideas were rated second in all cases.

Outside of the agricultural specialist contingent contacts for getting information were equally high with youth and C.D. specialists (34% plus in each case). Idea exchange was second for contact with community development specialists (31.3%) and planning joint programs with those in home economics (28.1%). For contacts with business and industry specialists the main purposes reported was getting information (21.9%) and for unspecified other reasons (18.8%) not reported in Table 4. The main purposes of contacts with continuing education specialists were for getting information (15.6%), planning joint program (15.6%), and idea exchange (21.9%). Direction, guidance or confirmation of discussions already made as a main purpose were reported by very few of the agricultural specialists.

TABLE 4a: CHIEF PURPOSE OF CONTACTS THAT FARM MANAGEMENT SPECIALISTS HAD WITH SELECTED COLLEAGUES AND OTHER PERSONS IN OWN EXTENSION ADMINISTRATIVE AREA

Kind of Subject Matter Specialist or Person	Total (%)* (N=32)	Chief Purpose of Contacts: For Direction (%)	Get Information (%)	Guidance or Advice (%)	Exchange Ideas (%)	Confirm Own Views (%)	Plan Joint Programs (%)	Other (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Kind of Specialist										
Farm management		0.0	9.4	3.1	28.1	9.4	43.8	3.1	25.0	95.2
Livestock		0.0	37.5	3.1	25.0	6.3	28.1	3.1	12.6	95.2
Agronomy		0.0	46.9	3.1	31.3	9.4	21.9	0.0	12.6	100.0
Dairy		0.0	31.3	0.0	3.1	3.1	12.5	0.0	53.1	33.3
Agricultural engineering		0.0	40.6	0.0	21.9	3.1	15.6	0.0	25.0	71.4
Community development		0.0	34.4	0.0	31.3	0.0	3.1	18.8	18.8	95.2
Home economics		0.0	31.3	3.1	31.3	3.1	28.1	12.5	15.7	100.0
Continuing education		0.0	15.6	0.0	21.9	0.0	15.6	12.5	37.5	85.7
Business and industry		0.0	21.9	0.0	12.5	0.0	9.4	18.8	37.4	38.1
Youth		0.0	34.4	3.1	21.9	3.1	12.5	12.5	25.0	100.0

TABLE 4a con't.

Kind of Subject Matter Specialist or Person	Total (%)* (N=32)	Chief Purpose of Contacts: For Direction (%)	Get Information (%)	Guidance or Advice (%)	Exchange Ideas (%)	Confirm Own Views (%)	Plan Joint Programs (%)	Other (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Other Person										
Vocational agriculture teachers		0.0	3.1	0.0	21.9	0.0	18.8	6.3	56.2	100.0
Leading farmers		6.3	18.8	3.1	21.9	15.6	3.1	0.0	56.2	100.0

*Percents generally exceed 100.0 because of multiple answers given.

TABLE 4b: CHIEF PURPOSE OF CONTACTS THAT AGRICULTURAL PRODUCTION SPECIALISTS HAD WITH SELECTED COLLEAGUES AND OTHER PERSONS IN OWN EXTENSION ADMINISTRATIVE AREA

Kind of Subject Matter Specialist or Person	Total (%)* (N=69)	Chief Purpose of Contacts								
		For Direction (%)	Get Information (%)	Guidance or Advice (%)	Exchange Ideas (%)	Confirm Own Views (%)	Plan Joint Programs (%)	Other (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Kind of Specialist										
Farm management		4.3	33.3	8.7	46.4	8.7	27.5	0.0	15.9	95.2
Livestock		4.3	40.6	11.6	37.7	5.8	15.9	1.4	18.8	95.2
Agronomy		2.9	36.2	8.7	37.7	8.7	21.7	0.0	24.6	100.0
Dairy		0.0	21.7	4.3	23.2	0.0	10.1	4.3	53.8	33.3
Agricultural engineering		1.4	46.4	10.1	36.2	8.7	24.6	0.0	14.5	71.4
Community development		0.0	31.9	5.8	34.8	1.4	13.0	11.6	21.7	95.2
Home economics		0.0	39.1	4.3	40.6	5.8	13.0	7.2	14.4	100.0
Continuing education		0.0	26.1	2.9	23.2	1.4	10.1	11.6	36.3	85.7
Business and industry		0.0	18.8	0.0	23.2	0.0	7.2	13.0	43.5	38.1
Youth		1.4	26.1	2.9	39.1	5.8	40.6	8.7	11.5	100.0

TABLE 4b con't.

Kind of Subject Matter Specialist or Person	Total (%)* (N=69)	Chief Purpose of Contacts: For Direction (%)	Get Information (%)	Guidance or Advice (%)	Exchange Ideas (%)	Confirm Own Views (%)	Plan Joint Programs (%)	Other (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Other Person										
Vocational agriculture teachers		1.4	8.7	2.9	29.0	2.9	24.6	8.7	42.2	100.0
Leading farmers		14.5	13.0	15.9	31.9	2.9	8.7	5.8	43.5	100.0

*Percents generally exceed 100.0 because of multiple answers given.

TABLE 4c: CHIEF PURPOSE OF CONTACTS THAT PRODUCTION SUPPORTING SPECIALISTS HAD WITH SELECTED COLLEAGUES AND OTHER PERSONS IN OWN EXTENSION ADMINISTRATIVE AREA

Kind of Subject Matter Specialist or Person	Total (%)* (N=16)	Chief Purpose of Contacts: For Direction (%)	Get Information (%)	Guidance or Advice (%)	Exchange Ideas (%)	Confirm Own Views (%)	Plan Joint Programs (%)	Other (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Kind of Specialist										
Farm management		0.0	37.5	0.0	50.0	6.3	31.3	6.3	0.0	95.2
Livestock		0.0	25.0	6.3	50.0	0.0	50.0	0.0	0.0	95.2
Agronomy		0.0	43.8	12.5	37.5	6.3	56.3	0.0	0.0	100.0
Dairy		0.0	18.8	0.0	18.8	0.0	25.0	0.0	58.9	33.3
Agricultural engineering		0.0	12.5	12.5	25.0	0.0	12.5	0.0	64.7	71.4
Community development		0.0	31.3	6.3	56.3	0.0	6.3	12.5	5.9	95.2
Home economics		0.0	18.8	0.0	43.8	0.0	37.5	18.8	5.9	100.0
Continuing education		0.0	37.5	0.0	31.3	0.0	6.3	18.8	17.6	85.7
Business and industry		0.0	18.8	0.0	12.5	0.0	6.3	18.8	53.0	38.1
Youth		0.0	18.8	0.0	62.5	0.0	43.8	18.8	5.9	100.0

TABLE 4c con't.

Kind of Subject Matter Specialist or Person	Total (%)* (N=16)	Chief Purpose of Contacts: For Direction (%)	Get Information (%)	Guidance or Advice (%)	Exchange Ideas (%)	Confirm Own Views (%)	Plan Joint Programs (%)	Other (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Other Person										
Vocational agriculture teachers		0.0	0.0	0.0	25.0	0.0	12.5	6.3	64.7	100.0
Leading farmers		0.0	0.0	12.5	37.5	6.3	6.3	6.3	47.0	100.0

*Percents generally exceed 100.0 because of multiple answers given.

For agricultural specialist in production agriculture the pattern was varied but in most respects similar to main purposes reported by farm management specialists. When they contacted those in farm management, it was most frequently to exchange ideas (46.4%) and second most for getting information (33.3%) (see Table 4b). Contacts with other agricultural specialists were mostly to obtain information and exchange ideas. Percentages ranged from a low of 21.7% for dairy specialist to a 46.4% high for agricultural engineers (Both for getting information). The low percentage for diary was certainly a partial function of the reported absence of dairy specialists within most of the areas (see Table 1). Contacts for idea exchange in all cases with percentages ranging from 23.2% to 37.7%. Contacts mostly for planning joint program were reported for 27.5% of those made with farm management, 24.6% with agricultural engineering, 21.7% with agronomy and 15.9% with livestock specialists. Most contacts with specialists outside of agriculture were made with community development and home economics specialists and mostly for getting information and second for exchange of ideas. Percentages for those in home economics were 39.1% and 40.6%, and for those in community development were 31.9% and 34.8%, respectively. Contacts with youth specialists percentages were getting information (26.1%), exchanging ideas (39.1%), and planning joint programs (40.6%). For less frequent contacts with business and industries specialists the main purpose were more for idea exchange (23.2%) than for getting information (18.8%).

In distinct contrast to either farm management or agricultural production specialists contacts that production supporting field specialists made with their colleagues were highly interactive in nature.

Thus contacts with farm management and livestock specialists (both 50.0%) were mostly for idea exchange. This was also true for contacts with community development (56.3%), youth (62.5%) and home economics (43.8%) specialists outside of or peripheral to production agriculture. Furthermore, contacts for planning joint programs made by the production supporting specialists, were very high by comparison to those made by farm management and production agriculture specialists (examples were joint programs with livestock, agronomy, youth, and home economies specialists). Despite the high percentages of basically interactive contacts, the percentage for information still was a main purpose sometimes took precedence. This was true for contacts with agronomy (43.8%) and continuing education specialists (37.5%).

Thus by and large the contacts of production supporting specialists were more conducive to the performance of the integration function than those of either their farm management or production agriculture specialist colleagues.

Evaluation of Contacts with Fellow Subject Matter Specialists An indication of the importance that field specialists placed on the help they received from colleagues outside of their own academic discipline, is another indicator of potential for performing the integration function in the delivery of science based information. To examine specialists' assessment of this interdisciplinary mix, each respondent was asked to indicate how much help he got (little, some, much, very much, necessary) from each of the specialists assigned to his extension planning area. These responses are reported in their entirety in Appendix Table 1. However, attention here is confined largely to the very much or necessary

ratings assigned to fellow specialists particularly to those representing academic disciplines other than their own.

Figure 1, which reports the very much and necessary assessments indicate that all three kinds of specialists (farm management, production and production supporting) rated help from livestock and agronomy specialists highest. The combined very much and necessary percentages were in the range of 28 to 38 percent. Farm management and production specialists assigned similar high ratings to agricultural engineers. Agronomists and livestock specialists both in the production specialist category assigned similar high help ratings to each other. To the degree that this can be taken as a reciprocated high rating of specialists of own kind (both being in production agriculture) it represents an exception rather than the rule. Thus, farm management specialists as a group and agricultural engineers, comprising most of the production supporting category of specialists, reported higher order, very much or necessary, help from specialists other than their own kind.

But it is important to note that the very much or necessary ratings were accorded quite exclusively within the agricultural fraternity. The only exception to this high importance rating in the agricultural aggregate were the ratings assigned to dairy specialists available in only 1/3 of the extension areas.

Beyond the agricultural fraternity the "help received" ratings, by all classes of farm advisors receded to a "little or some" range accorded to community development, continuing education and business and industry specialists. Production supporting specialists also rated youth specialists in the "little or some" help range. This was in contrast to

the other two kinds of specialists (farm management and production) who rated youth specialists in the general range of some to much help. Finally, all three classes of agricultural specialists rated assistance from home economics specialists in the some or much help range.

The Interpersonal Network Between In-field and On-campus Faculty

Field subject matter specialists have many options for getting cross disciplinary information at the campus level. There are 13 departments in the College of Agriculture, alone. They may consult faculty in their own academic department or they may consult those in any of the others. Contacts with the latter are of most significance to the performance of the integration function. Intensity of contacts, are here measured in terms of estimated numbers, per unit of time. It is assumed that the potential that resides in any source is contingent in some degree on it's repeated use. Diversity, the other dimension, of course, provides a means of getting cross disciplinary information to aggregate on behalf of clients.

Number of Contacts - It is apparent from Table 5 that the field staffs' contacts with the on-campus faculty were substantial and disproportionately directed to own academic department. Differences that did occur were in the degree to which this happened, not in any reversal. There was also an inclination for specialists who had less than average cross-disciplinary contacts within the district to exceed the average with the on campus faculty. Thus agronomy specialists with an inclination to contacts with their own kind in the district were conversely inclined in their contacts with the on campus faculty. A reverse pattern prevailed with agricultural engineering specailists who were cosmopolite in their interactions at the district level but heavily restricted to own

Figure 1 AMOUNT OF HELP THAT AGRICULTURAL SPECIALISTS OBTAINED FROM FELLOW AREA SPECIALISTS IN AGRICULTURE

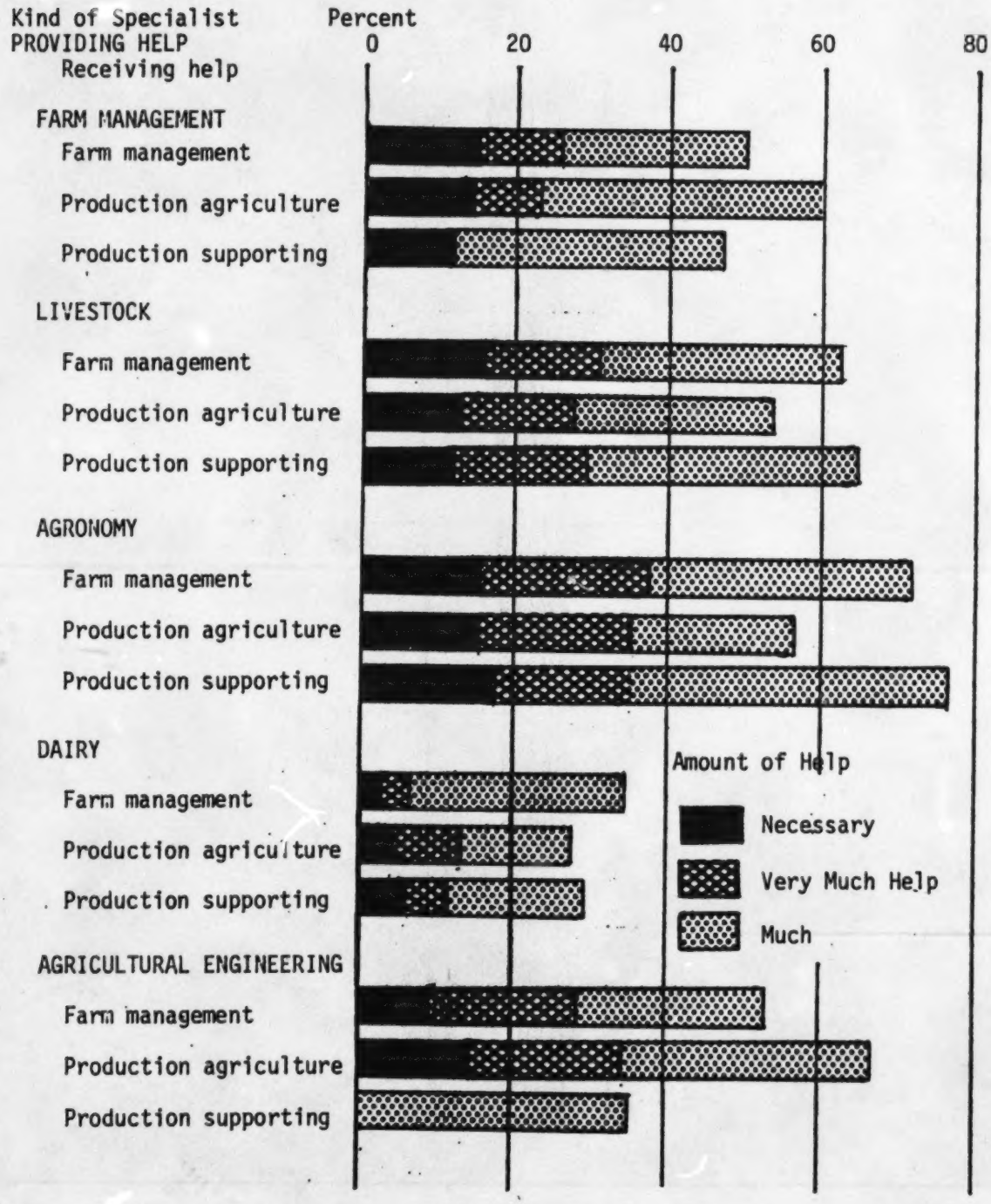

TABLE 5 DESIGNATED AGRICULTURAL EXTENSION FIELD SPECIALISTS CLASSIFIED BY KIND OF EXTENSION SPECIALTY AND NUMBER OF ON-CAMPUS FACULTY CONTACTS WITHIN AND OUTSIDE OF OWN ACADEMIC DEPARTMENT DURING THE PAST YEAR

Kind of Agricultural Specialists -within and outside of own department	Total (N)	Total (%)	Estimated Number of Contacts With On-Campus Faculty: None (%)	1-9 (%)	10-19 (%)	20-39 (%)	40-79 (%)	80 and over (%)	Median
Farm management									
within own department	29	100.0	0.0	6.8	10.4	13.8	34.5	41.5	62
outside	29	100.0	0.0	13.8	20.7	24.2	20.7	20.6	34
Livestock									
within own department	22	100.0	0.0	0.0	18.3	13.6	54.6	13.5	60
outside	22	100.0	9.1	22.8	22.8	13.6	27.2	4.5	18
Agricultural engineering									
within own department	10	100.0	0.0	0.0	0.0	30.0	20.0	50.0	70
outside	10	100.0	30.0	10.0	20.0	20.0	10.0	10.0	15
Agronomy									
within own department	26	100.0	0.0	7.6	3.8	30.9	27.0	30.7	55
outside	26	100.0	3.8	11.5	15.4	19.2	19.3	30.8	40
Dairy									
within own department	6	100.0	0.0	16.7	0.0	0.0	49.9	33.4	60
outside	6	100.0	16.6	16.7	16.7	16.7	16.7	16.6	20

TABLE 5
(cont.)

Kind of Agricultural Specialists -within and outside of own department	Total (N)	Total (%)	Estimated Number of Contacts With On-Campus Faculty: None (%)	1-9 (%)	10-19 (%)	20-39 (%)	40-79 (%)	80 and over (%)	Median
Horticulture									
within own department	7	100.0	0.0	0.0	14.3	14.3	57.1	14.3	45
outside	7	100.0	0.0	0.0	28.6	14.3	28.6	28.5	45
Community development	26	100.0	3.9	11.6	7.7	30.6	30.6	15.6	38
within own department	26	100.0	3.9	11.6	7.7	30.6	30.6	15.6	38
outside	26	100.0	7.7	15.4	3.9	30.6	30.8	11.6	33

department in their contacts with the on-campus faculty. But, aside from these reversal inclinations there were other tendencies that should be noted. Horticulture specialists, for example, were evenly divided between own departmental colleagues and those in other departments. It is also apparent that all of the specialists felt a need for help outside of their own specialties other than specialites for carrying out their own advisement responsibilities. But it could hardly be said on the basis of this measure that farm management specialists presumed to have more integrating capabilities than their academic specialist colleagues were more inclined to cross disciplinary contacts with the on campus faculty.

However, as we turn to the number of on campus faculty within and outside of own academic department, the integrating potential of the informal communication netowrk began to emerge in clearer perspective (see Table 6). By a substantial margin, farm management specialists contacted the largest number of on campus faculty (when compared by medians). The meadians were eight for within and ten for outside of own academic department. Dairy specialists showed the same in-out pattern, but with far fewer on campus faculty involved, i.e. 3.5 within and 4.0 outside. For agronomists the numbers were equally divided at 6 and 6. Even though all other agricultural specialists contacted more faculty within own department than outside, they still had many cross-disciplinary contacts.

Thus, the informal information seeking - exchange structure provided a high potential for cross disciplinary informational input servicing client informational needs. Table 7 which shows the number of on campus departments contacted by the extension field staff, further supports the foregoing conclusions.

Support for the Postulated Necessary Conditions for the Formation and Maintenance on Interpersonal Communicative Network Among Spcialists Contacts. These were assumed to be:

a. A mutually recognized need among specialists for informational exchange with others not of their own kind.

b. An administrative structure and/or philosophy that allows free interpersonal exchange of information to happen or insures that it does occur.

c. Personal rewards for information exchange among subject matter specialists.

What evidence can we adduce in support of these conditions? Perhaps designation of an agriculturalist (one of the subject matter specialists) in each county as the person responsible for fielding and either answering or quickly finding answers for any in coming question is our best evidence in support of a recognized need for cross-disciplinary informational exchange among specialists. An on-campus extension administrator recently labeled this as one of the two recent innovations that has greatly enhanced the capability of the extension service to serve the informational needs of people in the state. The other was the addition of radio telephones which greatly enhanced the quick accessibility of subject matter specialists to those who need their services.

True, the highly differented system of information development, basicly dysfunctional to problem solving, is extended from campus to the field. Nevertheless, there are built in features that facilitate interpersonal interaction among subject matter specialists. This provides opportunities for getting cross-disciplinary information. Administrative philosophy is conducive forming and maintaining these cross disciplinary interactive contacts. Regular meetings of the staff are arranged at the

TABLE 6 DESIGNATED AGRICULTURAL EXTENSION FIELD SPECIALISTS CLASSIFIED BY KIND OF EXTENSION SPECIALTY AND NUMBER OF ON-CAMPUS FACULTY CONTACTED WITHIN AND OUTSIDE OF OWN ACADEMIC DEPARTMENT DURING THE PAST YEAR

Kind of Agricultural Specialists -within and outside of own department	Total (N)	Total (%)	Number of On-Campus Faculty Contacted: None (%)	1-4 (%)	5-9 (%)	10 or more (%)	Median
Farm Management							
within own department	35	100.0	0.0	25.8	31.3	42.9	8
outside	35	100.0	2.8	20.0	25.7	51.5	10
Livestock							
within own department	24	100.0	0.0	25.0	75.0	0.0	6
outside	24	100.0	8.3	45.8	20.8	25.1	4
Agricultural Engineering							
within own department	12	100.0	0.0	25.0	50.0	25.0	7
outside	12	100.0	25.1	50.0	16.6	8.3	3
Agronomy							
within own department	29	100.0	0.0	20.5	69.2	10.3	6
outside	29	100.0	3.4	27.5	38.1	31.0	6
Dairy							
within own department	6	100.0	0.0	100.0	0.0	0.0	3.5
outside	6	100.0	16.7	33.2	33.4	16.7	5

TABLE 6
(cont.)

Kind of Agricultural Specialists -within and outside of own department	Total (N)	Total (%)	Number of On-Campus Faculty Contacted: None (%)	1-4 (%)	5-9 (%)	10 or more (%)	Median
Horticulture							
within own department	7	100.0	0.0	42.9	57.1	0.0	5
outside	7	100.0	0.0	57.1	28.6	14.3	4
Community development							
within own department	29	100.0	3.5	31.0	55.1	10.4	5
outside	29	100.0	6.9	27.6	34.3	31.2	7

TABLE 7 DESIGNATED AGRICULTURAL EXTENSION FIELD SPECIALISTS CLASSIFIED BY KIND OF EXTENSION SPECIALTY AND NUMBER OF ACADEMIC DEPARTMENTS CONTACTED DURING THE PAST YEAR

Kind of Agricultural Specialists	Total		Number of On-Campus Academic Departments Contacted				
	(N)	(%)	One only (%)	2-4 (%)	5-9 (%)	10 & over (%)	Median (%)
Farm management	36	100.0	2.8	19.4	69.4	8.4	6
Livestock	24	100.0	8.3	41.6	37.5	17.6	4.5
Agricultural engineering	13	100.0	23.1	46.1	23.1	7.7	3
Agronomy	29	100.0	3.4	48.4	44.8	3.4	4
Dairy	6	100.0	16.7	33.2	33.4	16.7	4.5
Horticulture	7	100.0	0.0	42.9	57.1	0.0	5
Community development	29	100.0	3.5	27.6	51.7	17.2	6

district center where informational exchange can occur. Also, specialists who are stationed in designated counties have scheduled visits to each of the other county offices. Telephone and more recently radio telephone, provides channels for quick access to other specialists if and as needed. Also, there are on campus meetings which permit contacts with faculty to obtain information directly, or perhaps more importantly establish interpersonal relationships upon which they can draw to get information, if and as needed. Once made, these contacts may become regular and be used to the mutual benefit of both.

Indications are that the field staff would make additional requests for information from the on-campus faculty if and as needed, with almost no inclination to go through official channels. Also, there was almost no reported cases of unfavorable or inconsiderate treatment by the on-campus faculty to requests made for information by the in-field staff. Initiative for obtaining information was heavily with the in-field staff. There was little perceived feeling that administrators viewed information seeking from the on campus faculty as either an indication of own academic incompetence or of superior performance.

Lionberger and Cheng (1980) have previously noted that the greatest reward derived from extension work was from working with people and helping them solve their problems. Therefore, personal rewards from doing this successfully are surely high.

Thus it was that there is strong evidence in support of our assumptions about conditions necessary for the formation and maintenance of interpersonal relationships among subject matter specialists. Furthermore, these contacts are perhaps rightfully presumed to have a high

potential for acquiring diverse informational inputs and getting them integrated into plans for achieving user goals.

4. Summary and Conclusions

Despite a dysfunctional structural arrangement in the officially prescribed agricultural research-extension system of the Missouri College of Agriculture to the performance of the integration (putting together) function on behalf of farmers, there developed among subject matter specialists an interpersonal network that has a high potential for contributing to this function.

In many respects the agricultural production supporting subject matter specialists, especially those in Agiruclтural engineering, are as well situated in the interpersonal network to serve as information integrators as farm management specailists who by position requirement and training are expected to assume this responsibility. This is likely because they need to apply their knowledge in an agricultural production context where irformational inputs from other specialists are needed. Even though agricultural production specialists probably possess information most directly usable by farmers, they too become a part of the high potential interpersonal network that contributes to the performance of the integration function on behalf of farmers as users of science based information.

The necessary cross-disciplinary inforamtional exchange, often interactive in nature, can and does occur at two levels (within the district and at the on-campus level). Subject matter specialists who are highly cross-disciplinary interactive at the local level are not always interactive at the campus level and vice versa. But all are part of the cross-disciplinary network.

At the same time the official agricultural research-extension system for the generation and delivery of science based specialty information has permitted and encouraged the development of an interpersonal communicative network among specialists who have the potential for integrating bits and pieces of specializzed information into new combinations (the integration function) if and as needed by users. In an otherwise highly differentiated system dysfunctional to the performance of the integration function, this network is crucial. The addition of the radio telephone as a fast communication device has facilitated this exchange.

Perhaps an additional conclusion in the nature of a hypothesis is that given the presence of the conditions necessary for their formation these interpersonal networks will develop and be maintained over time.

FOOTNOTE

[1]Due to resource constraints, specialists in home economics continuing education and business and industry were not asked to complete questionnaires. Also since the main purpose of the larger study was to discover and understand systems to generate, deliver and use science based information agricultural and community development extension were regarded as appropriate vehicles for doing this.

[2]Performance of the integration function by the 29 community development specialists included in the study is the subject of a previous journal article (Lionberger and Wong, 1980) The role of the education assistants as system linkers is the subject of a forthcoming research bulletin.

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APPENDIX

TABLE 1a: AMOUNT OF HELP RECEIVED BY FARM MANAGEMENT SPECIALISTS FROM SELECTED COLLEAGUES AND OTHER PERSONS IN OWN EXTENSION ADMINISTRATIVE AREA

Kind of Subject Matter Specialist or Person	Total (%) (N= 32)	Amount of Help Received in Own Work: Little (%)	Some (%)	Much (%)	Very Much (%)	Necessary (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Kind of Specialist								
Farm management	100.0	3.1	12.5	25.0	9.4	15.6	34.4	95.2
Livestock	100.0	12.5	12.5	31.2	15.6	15.6	12.6	95.2
Agronomy	100.0	3.1	9.4	34.3	21.9	15.6	15.7	100.0
Dairy	100.0	6.3	9.4	26.1	3.1	3.1	50.0	33.3
Agricultural engineering	100.0	6.3	12.5	24.9	18.8	9.4	28.1	71.4
Community development	100.0	31.2	24.9	18.8	0.0	6.3	18.8	95.2
Home economics	100.0	21.9	25.0	28.0	9.4	3.1	12.6	100.0
Continuing education	100.0	21.9	34.3	6.3	3.1	0.0	34.4	85.7
Business and industry	100.0	34.4	25.0	3.1	3.1	0.0	34.4	38.1
Youth	100.0	15.6	28.1	31.3	3.1	3.1	18.8	100.0
Other Persons								
Vocational agriculture teachers	100.0	9.4	31.2	3.1	3.1	3.1	50.0	100.0
Leading farmers	100.0	3.1	3.1	18.8	12.5	15.6	46.9	100.0

APPENDIX

TABLE 1b: AMOUNT OF HELP RECEIVED BY PRODUCTION AGRICULTURE SPECIALISTS FROM SELECTED COLLEAGUES AND OTHER PERSONS IN OWN EXTENSION ADMINISTRATIVE AREA

Kind of Subject Matter Specialist or Person	Total (%) (N= 69)	Amount of Help Received in Own Work: Little (%)	Some (%)	Much (%)	Very Much (%)	Necessary (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Kind of Specialist								
Farm management	100.0	5.8	17.4	36.2	8.7	14.5	17.4	95.2
Livestock	100.0	4.3	21.8	26.2	14.5	13.0	20.2	95.2
Agronomy	100.0	2.9	17.4	20.3	18.8	17.4	23.2	100.0
Dairy	100.0	7.2	11.6	14.5	8.7	4.3	53.7	33.3
Agricultural engineering	100.0	0.0	17.4	31.9	20.3	14.5	15.9	71.4
Community development	100.0	33.4	31.9	10.1	2.9	2.9	18.8	95.2
Home economics	100.0	18.8	37.8	18.8	7.2	2.9	14.5	100.0
Continuing education	100.0	21.7	30.5	10.1	0.0	2.9	34.8	85.7
Business and industry	100.0	24.6	21.7	10.0	0.0	2.9	40.7	38.1
Youth	100.0	8.7	29.0	34.8	11.6	4.3	11.6	100.0
Other Persons								
Vocational agriculture teachers	100.0	14.5	23.2	13.0	2.9	4.3	42.1	100.0
Leading farmers	100.0	1.4	7.2	18.8	20.3	11.6	40.7	100.0

APPENDIX

TABLE 1c: AMOUNT OF HELP RECEIVED BY AGRICULTURAL PRODUCTION SUPPORTING SPECIALISTS FROM SELECTED COLLEAGUES AND OTHER PERSONS IN OWN EXTENSION ADMINISTRATIVE AREA

Kind of Subject Matter Specialist or Person	Total (%) (N= 17)	Amount of Help Received in Own Work: Little (%)	Some (%)	Much (%)	Very Much (%)	Necessary (%)	Not Applicable or No Answer (%)	Availability within the Area (%)
Kind of Specialist								
Farm management	100.0	5.9	41.1	35.3	0.0	11.8	5.9	95.2
Livestock	100.0	5.9	23.5	35.3	17.6	11.8	5.9	95.2
Agronomy	100.0	0.0	17.6	41.3	17.6	17.6	5.9	100.0
Dairy	100.0	0.0	11.8	17.6	5.9	5.9	58.8	33.3
Agricultural engineering	100.0	0.0	0.0	35.3	0.0	0.0	64.7	71.4
Community development	100.0	58.7	11.8	11.8	0.0	5.9	11.8	95.2
Home economics	100.0	35.3	17.6	25.5	0.0	5.9	17.7	100.0
Continuing education	100.0	35.3	23.5	5.9	0.0	5.9	29.4	85.7
Business and industry	100.0	41.1	5.9	11.8	0.0	0.0	41.2	38.1
Youth	100.0	35.3	41.1	5.9	5.9	5.9	5.9	100.0
Other Person								
Vocational agriculture teachers	100.0	11.8	11.8	5.9	5.9	5.9	58.7	100.0
Leading farmers	100.0	0.0	11.8	17.6	11.8	5.9	52.9	100.0